SIGEN

40 MB TAPE SYSTEM

For the IBM AT and Compatibles

GETTING STARTED GUIDE

Documentation Number 650645 Rev. 1

FCC WARNING

This equipment generates and uses radio frequency energy and if not installed and used properly, that is, in strict accordance with the manufacturer's instructions, may cause interference to radio and television reception. It has been type tested and found to comply with the limits for a Class B computing device in accordance with the specifications in Subpart J of Part 15 of FCC Rules, which are designed to provide reasonable protection against such interference in a residential installation. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

Reorient the receiving antenna.
Relocate the computer with respect to the receiver.
Move the computer away from the receiver.
Plug the computer into a different outlet so that computer and receiver are on different branch circuits.

If necessary, the user should consult the dealer or an experienced radio/television technician for additional suggestions. The user may find the following booklet prepared by the Federal Communication Commission helpful:

"How to Identify and Resolve Radio-TV Interference Problems"

This booklet is available from the U.S. Government Printing Office, Washington, DC 20402, Stock No. 004-000-00345-4.

GETTING STARTED GUIDE

TABLE OF CONTENTS

SECTION 1

INTRODUCTION

The SIGEN tape drive is a half-height system, designed for use with IBM AT personal computers that have at least one half-height floppy drive. The SIGEN 40 MB system can also be installed on many other personal computers that are IBM compatible.

The SIGEN drive uses DC 2000 mini data cartridges to provide 40 megabytes of storage capacity per tape. Multiple tape backups are possible.

It does not require its own controller card, but installs using the internal floppy disk drive controller card on most computers.

The SIGEN tape drive installs easily below the floppy drive in your personal computer. In most instances, connection of cables and hardware is all that is necessary when installing the unit. In some cases, such as when you have two floppy disk drives, there are additional installation steps. Installation procedures are discussed in Section 2 of this guide.

Handling The SIGEN 40 MB Tape Drive Sub-Assembly

When handling the SIGEN internal tape drive, you should bear in mind that *it is a sub-assembly*. That is, the unit does not have its own casing, and therefore its components *are exposed*. This may cause it to look unfamiliar to many users, but it does not make the SIGEN tape system more difficult to install. Because components are exposed, it is recommended that you follow these tips on handling the unit:

- Do not let packing materials or any foreign matter fall into the unit.
- Hold the unit by its sides. Do not hold the SIGEN tape system by the front bezel, as that could cause the bezel to become mis-shapen or broken.
- Do not touch the printed circuit board on the unit.
- Do not touch the read/write head or any of the interior parts of the unit.

NOTE:

Preventive maintenance on the tape read/write head or capstan is not recommended or required. *Damage may result if cleaning the tape read/write head is attempted.*

SECTION 2

INSTALLATION

The following installation instructions apply to the IBM-AT.

The SIGEN 40 MB tape drive is designed to be installed in the space allocated for floppy drive B:. This space will be empty if you have only one floppy drive. However, if your personal computer has two floppy disk drives, drive B: as well as drive A:, you will have to remove floppy drive B: before you install the tape drive.

In either case, the first step is to remove the outer cover of the computer by following the step-by-step instructions below. (This information should also be in the manual that came with your personal computer.)

REMOVE OUTER COVER

1) Turn off your system unit and all external units.
2) Unplug your system unit and all external units from wall outlets.
3) If your system unit has a detachable back panel, disconnect all cables and cords from the back of the unit.
4) Remove the detachable back panel from the rear of the system unit, if it has one.
5) Remove the five (5) cover-mounting screws from the back of the unit, and remove the cover by sliding it carefully forward and tilting it up.

Before continuing with the installation, read the following instructions regarding the terminator/resistor pack.

TERMINATOR/RESISTOR PACK

Whenever several components are linked together in a computer system, the last component in the chain must be "terminated" by a resistor pack or jumper connector called a "terminator". After the SIGEN tape drive is installed, it and your floppy drive will be linked, so a terminator will have to exist on either the tape drive or floppy drive A:, **but not on both.**

As shipped to you, the SIGEN tape drive already has such a terminator in place. Compare your unit to the rear view of the SIGEN tape drive shown in Figure 2-1. The terminator is on the right side of the drawing, set in a socket on the printed circuit board. The visible side of the terminator has no printing on it, while the opposite side has letters, numbers or a combination of both printed on it.

Because one of several configurations may exist on your system, this manual cannot tell you which terminators already reside in your unit. But, using the following guidelines, you can determine the location of the terminator(s). Where instructed, you move a terminator or two to insure that only one terminator is in your unit when you are finished.

1) If you have an IBM AT and a single floppy drive, a terminator will be on the floppy drive, unless you have removed it. Leave that terminator on the A: drive and remove the terminator from the tape drive.

2) If you have an IBM AT and two floppy drives, the terminator may be on drive A:. If it is, leave it there and remove the terminator from the tape drive.

3) If you have an IBM-compatible, the terminator may be on drive B:. If it is, you must remove the terminator from drive B: and re-install it *in the same direction and location* on drive A:. To keep track of the correct direction, first note any printing on the terminator before you take it out of drive B:. Make sure that printing runs in the same direction when you place the terminator into drive A:. After installing this terminator on drive A:, remove the terminator that came on the tape drive.

The figure below shows the rear of the SIGEN tape drive subassembly with its terminator/resistor pack in place.

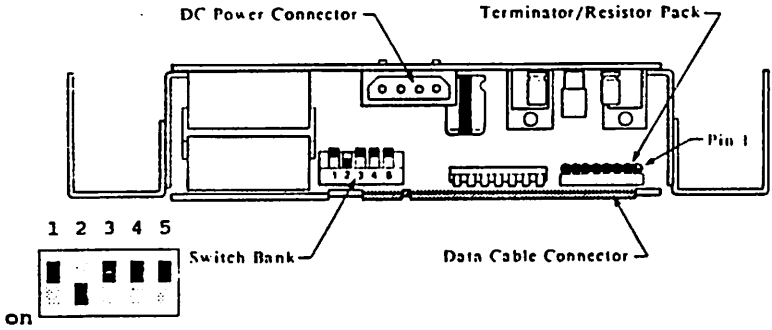

Figure 2-1 : SIGEN TAPE DRIVE: Rear View

Note: Pin 1 of the terminator should have a either a dot, a stripe, or "Pin 1" marked on it to denote the "pin 1" end. If none of these esists, then just note any printing on the terminator (numbers, letters or both), and note which end the printing begins at.

MOVE DISK DRIVE A: OUT OF THE WAY

Having removed the cover, you now have a clear view of the cable connections to the top floppy drive, drive A:. It will be easier to install the tape drive unit if you move the A: drive forward and out of your way. This makes it easier to use your hands in this tight-fitting area. To do this:

1) Remove the black ground-wire connected to the upper right-hand corner of the A: drive controller board.

2) Unplug the multi-colored DC power harness located to the left of the ground-wire.

3) Remove the two screws and L-brackets found on either side of the disk drive's front opening. Set them aside carefully.

4) With the L-brackets removed, slide the disk drive forward about four (4) inches. *Be careful not to move the drive too far forward.* The aim is just to make enough room to carry out the remaining steps.

REMOVAL OF DISK DRIVE B:

Do you have a Disk Drive B:? If not, you may skip ahead to the next topic: INSTALL THE SIGEN TAPE DRIVE SUB-ASSEMBLY.

If you have a disk drive B: it must be removed and replaced by the SIGEN tape drive. The steps for this (next page) are very similar to the steps taken above with disk drive A:.

1) Remove the screws and L-brackets on either side of the front of the B: drive just as you did with the front of the A: drive. Set the screws and L-brackets aside carefully, for you will be using them again.

2) Because you moved the A: drive forward about four inches (in Step 4, page 2-4) you now can view the rear of the B: drive beneath.

3) Disconnect the black ground-wire from the upper right-hand corner of the B: drive board. Push this ground-wire to one side. It will not be used with the tape drive, because the drive is grounded through its side rails.

4) Unplug the multi-colored DC power harness.

5) Disconnect the data cable.

6) Now you should be able to slide the B: drive forward and out of the unit.

7) Look for the terminator at the rear of the circuit board of the B: drive. On some manufacturers' drives, the terminator is a resistor pack located in a socket on the board. On other manufacturers' drives it is a jumper connector seated over two pins that stick up vertically from the board. In either case, the letters "TM" often are printed on the board next to this terminator. If the terminator is there, lift it from its location on the B: drive and install it in the same location -- and in the same direction -- on the A: drive's circuit board.

INSTALL THE SIGEN TAPE DRIVE SUB-ASSEMBLY

Before installing the tape drive, make certain that the switch settings are correct. Look into the back of the tape drive and find the switch bank just to the left of center on the bottom board, as shown in Figure 2-1. **Be sure that Switch-2 is DOWN. All other switches must be in the UP position.** Switches 1 through 4 are for hardware drive selection. Switch 5 is for diagnostics and must always be off (in the up position).

1) If you do not have a disk drive B:, a faceplate covers the front of the disk drive opening. This faceplace must be removed. Remove the screws and L-brackets of the faceplate, just as you did with the front of disk drive A:. Set them aside carefully for you will be using them again.

2) Holding the tape drive unit carefully by its sides, slide the unit into the opening under Drive A:.

3) To make it easier to attach cables to the rear of the tape drive unit, move the A: drive forward about four (4) inches, if you have not already done so. (see Step 4, page 2-4).

4) Locate the data cable (ribbon cable) labeled "B" on the inside of the computer and connect it to the data cable connector at the left rear of the tape unit. Figure 2-1 shows the location of this data cable connector. This connector is keyed and cannot be connected incorrectly.

INSTALL THE TAPE DRIVE SUB-ASSEMBLY (Cont.)

5) Plug the multi-colored DC power harness into the DC power connector at the top center edge of the tape unit board (see Figure 2-1). This is a keyed shape and cannot be plugged in incorrectly.

6) Now slide the A: drive back into the proper position and reconnect its data cable, DC power cable, and ground wire.

7) Replace the screw/L-bracket assemblies at each side of both the A: drive and the SIGEN tape drive.

8) Slide the cover back onto the system unit and replace the screws on the back. Replace the back panel (if there was one), replace cables, plug in and power up the system. WARNING: *Do not try to use the system without replacing the cover. Bright light will interfere with the operation of the tape drive.*

9) If you have removed the B: disk drive from your IBM AT, you must run the setup routine from the AT diagnostics diskette to inform the system that the B: drive is no longer there. When you run that setup, be sure to indicate that only one floppy-disk drive is now installed in your system.

10) Refer to the SY-TOS manual for instructions on how to install and use the software.

NOTES

SECTION 3

USE AND CARE

TAPE CARTRIDGE USE AND CARE

Observe these few simple rules while handling the magnetic tape media:

- A cartridge should be conditioned to room temperature before using. Allow one hour within the operating environment for each hour outside the operating environment.
- Be certain that no tape cartridge is in the drive when powering up or powering down the computer system.
- You should retension your tape before you use a cartridge for the first time.
- Do not attempt to disassemble the cartridge or adjust the assembly screws.

TAPE CARTRIDGE USE AND CARE (Cont.)

- The tape cartridge may be "write-protected" so that valuable files cannot be inadvertently over-written. A black plastic slider in the upper left-hand corner of the cartridge can be slid to the left to record, or to the right to write-protect, the cartridge.

- Never remove the tape cartridge while any kind of tape transfer is under way. The green LED on the front of the tape drive is on while the drive is operating. Wait for the operation to finish and the screen menu to return before removing the tape, otherwise data may be lost.

- Do not leave your cartridge fully inserted with the tape against the read/write head when the tape drive is not in use. To do so could result in damage to the tape, to the tape read/write head, or to the capstan.

- The temperature must not exceed 113 degrees F or go below 41 degrees F while you are using or storing your equipment.

- Relative humidity should be between 20% and 80% while you are using or storing your equipment. (Below 26 degrees C wet-bulb temperature.)

- Never touch the tape itself.

- Retension the tape cartridge before use if it has not been used for a period of four hours or more, or if it has been subjected to vibration, shock, or extreme temperature fluctuations.

TAPE CARTRIDGE USE AND CARE (Cont.)

- Do not use the drive for more than 3 hours continuously. Before using again, allow the drive a period of rest at least equal to the length of time that it has been in use.

STORING THE TAPE CARTRIDGE

- Keep your tape cartridges in a cool, dry place when not in use. Observe the manufacturer's environmental specifications listed above.
- Keep tape cartridges away from stray magnetic fields that could alter the recorded information on the tape.
- Do not store the tape cartridge in direct sunlight.

NOTE:

Preventive maintenance on the tape read/write head or capstan is not recommended or required. *Damage may result if cleaning the tape read/write head is attempted.*